

**Amendment Under 37 C.F.R. §1.312**

Applicant: OSULLIVAN

Serial No.: 09/884,894

Filed: June 19, 2001

For: ISOLATED BIFIDOBACTERIA THAT PRODUCE SIDEROPHORES WHICH INHIBIT GROWTH OF  
LACTOCOCCUS LACTIS

Page 4 of 7

**Amendments to the Claims**

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

**1-8. Canceled**

9. **(Currently amended)** A method for inhibiting the replication of a microbe selected from the group consisting of *Lactococcus lactis*, *Clostridium difficile* and *Clostridium Clostridium perfringens*, in the gastrointestinal tract of an animal, comprising administering to an animal a composition comprising an isolated *Bifidobacterium* that secretes a siderophore that inhibits growth of *Lactococcus lactis* wherein the composition comprises substantially no free iron, comprises an iron chelator, or a combination thereof, and measuring the presence of said microbe that was present in the gastrointestinal tract of the animal prior to administration, where a decrease in the presence of the microbe in the animal after administration of the *Bifidobacterium* indicates inhibition of the replication of the microbe.

10. **(Original)** The method of claim 9 further comprising growing the *Bifidobacterium* under iron limited conditions before administration.

11. **(Original)** The method of claim 10 wherein growing the *Bifidobacterium* under iron limited conditions comprises growth in the presence of an iron chelator.

12. **(Original)** The method of claim 9 wherein the animal is a human.

**13-14. Canceled**

15. **(Original)** The method of claim 9 wherein the gastrointestinal tract is the large intestine.

**16-19. Canceled**

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Page 5 of 7

20. **(Previously presented)** A method for establishing a Bifidobacterium flora in the gastrointestinal tract of an animal comprising administering to an animal a composition comprising an isolated Bifidobacterium that secretes a siderophore that inhibits the growth of *Lactococcus lactis*, wherein the composition comprises substantially no free iron, comprises an iron chelator, or a combination thereof, and measuring the presence of the Bifidobacterium in the gastrointestinal tract of the animal after administration.

21. **(Original)** The method of claim 20 further comprising growing the Bifidobacterium under iron limited conditions before administration.

22. **(Original)** The method of claim 20 wherein the gastrointestinal tract is the large intestine.

23. **(Original)** The method of claim 20 wherein the animal is a human.

24. **(Original)** The method of claim 23 wherein the human is an infant selected from the group consisting of an immature infant, a premature infant, and a mature infant.

25. **(Original)** The method of claim 23 wherein the administration occurs after the human has undergone antibiotic therapy.

26. **(Original)** The method of claim 23 wherein the administration occurs after the human has undergone chemotherapy.

27. **(Currently amended)** A method for preventing the replication of microbes selected from the group consisting of *Lactococcus lactis*, *Clostridium difficile* and *Clostridium perfringens* in a food, the method comprising adding to the food a composition comprising an isolated Bifidobacterium that secretes siderophore that inhibits growth of *Lactococcus lactis*, wherein the composition comprises substantially no free iron, comprises an iron chelator, or a combination thereof.

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Page 6 of 7

**28. Canceled**

29. (Previously presented) A composition comprising an isolated *Bifidobacterium* that secretes a siderophore that inhibits growth of a *Lactococcus lactis*, wherein the composition comprises substantially no free iron, comprises an iron chelator, or a combination thereof.

30. (Previously presented) A method for obtaining a secreted siderophore that inhibits the growth of *Lactococcus lactis* from an isolated *Bifidobacterium*, the method comprising incubating the isolated *Bifidobacterium* under iron limited conditions, and isolating the siderophore.

**31-37. Canceled**

38. (Currently amended) A method for inhibiting the replication of a microbe selected from the group consisting of *Lactococcus lactis*, *Clostridium difficile* and *Clostridium perfringens* in a composition, the method comprising adding to the composition a secreted siderophore that inhibits the growth of *Lactococcus lactis* obtained from an isolated *Bifidobacterium*.

**39-40. Canceled**

41. (Previously presented) A composition consisting essentially of an isolated *Bifidobacterium* that secretes a siderophore that inhibits growth of a *Lactococcus lactis*.

**42-43. Canceled**

44. (Previously presented) A composition comprising an isolated *Bifidobacterium* that secretes a siderophore which inhibits growth of a *Lactococcus lactis*, and a food, wherein said composition is substantially free of iron, comprises an iron chelator, or a combination thereof.